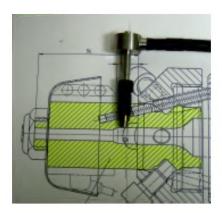


# Operating Instructions Nozzle Temperature Sensor NTS 2 - IR - A2





Fast infrared temperature sensor for measuring the melt temperature in the nozzle of an injection molding machine

Telefon: +49 4331 9065

Telefax: +49 4331 9066

### **Nozzle Temperature Sensor**

NTS 2 - IR - A2





Telefon: +49 4331 9065

Telefax: +49 4331 9066

### **Nozzle Temperature Sensor**

NTS 2 - IR - A2



### Installation of the sensor

The FOS NTS 2 - IR - A2 sensor is a fast infrared thermometer for measuring the melt temperature in the nozzle of an injection moulding machine. The measuring of the infrared radiation of the melt is the only method to detect the exact temperature in milliseconds so that too high or too low temperatures of the melt can effectively be avoided.

### Installation of the sensor:

- 1. Mount the sensor into the measuring bore hole. Please make shure that the sensor and the amplifier show identical serial numbers!
- 2. Connect a 24 V DC power supply to the amplifier and the green LED will start shining.
- 3. The sensor is now ready for operation!

### Zero and Span Adjustment:

Attention: The factory calibration of the sensor was done by means of a grey infrared radiator. The actual sensor-IR-output and the sensor head temperature output signal (TC = Thermocouple) can be found on the amplifier label.

### Start condition:

Make shure that the sensor (IR-output) shows approximately room temperature when the sensor head is cold. If not use the zero adjustment screw. (Try to get 25 - 30 °C read out = 625 - 750 mV).

Nozzle filled with plastic melt, nozzle at operating temperature.

Now the IR signal should show the same temperature as the nozzle body. The difference of the readings can be ajusted by means of the span screw at the backpanel of the amplifier.

Now the sensor is ready for operation !!

Telefon: +49 4331 9065

Telefax: +49 4331 9066

### **Nozzle Temperature Sensor**

NTS 2 - IR - A2



### **Technical Data:**

**Principal of function:** A fast infrared thermometer for measuring the melt

temperature in the nozzle of an injection moulding machine.

**Supply Voltage:** 24 VDC (+/- 10%) (max. 300 mA)

Output signals:

 $\begin{array}{ll} \mbox{Infrared thermometer:} & 25 \ \mbox{mV} \ / \ \mbox{°C} \\ \mbox{Conventional thermometer:} & 10 \ \mbox{mV} \ / \ \mbox{°C} \\ \end{array}$ 

Linearity: better than 1% FSO

Precision: better than 1% FSO

Temperature range: 50 °C - 400 °C

Response time: typ. 15 ms

### **Nozzle Temperature Sensor**

NTS 2 - IR - A2



# **Connecting cable**

Material PVC, color grey, Ø 7,4 mm, 6-wires twisted pairs with overall screen

Pin connecting list of the Weidmüller plug for the Infrared nozzle thermometer Type NTS 2 -IR -A2

	Pin	Color	Signal
[1]	Temp. TC	Green	Temperature output: 10 mV/°C
[2]	Temp. IR	White	IR-Temperature output: 25 mV/°C
[3]	Temp. IR	Brown/Yellow -	GND to Pin [1] u. [2]
[4]	Reserved		NC
[5]	Reserved		NC
[6]	Reserved		NC
[7]	Reserved		NC
[8]	Reserved		NC
[9]	Reserved		NC
[10]	+ 24 VDC	Pink	+ 24 VDC
[11]	GND	Grey	GND
[12]	PE	Green-Yellow -	PE

Seite/page 4

### Nozzle Temperature Sensor

NTS 2 - IR - A2



Power

### Connecting scheme

Weidmüller SL 5.08/12/90B 3.2 SN OR

Weidmüller BLZ 5.08/12B SN OR

Klemmleiste steckbar / Plug in terminal blocks:

Steckerleiste / Header:

Steckerleiste / Header: Klemmleiste steckbar / Plug in terminal blocks:

Netzgerät / Power supply NG SPS 24:

Meßverstärker / Amplifier MTS 408:

Weidmüller SL 5.08/8/90B 3.2 SN OR Weidmüller BLZ 5.08/8B SN OR

Material PVC, Farbe grau,  $\varnothing$  7,4 mm, 6-adrig paarig verseilt mit Gesamtschirm Material PVC, colour grey,  $\varnothing$  7,4 mm, 6 wires twisted pairs with overall screen

Weidmüller BLZ 5.08/12B SN OR Weidmüller BLZ 5.08/8B SN OR

Zero Span 4] Reserved 5] Reserved 6] Reserved 7] Reserved 8] Reserved 9] Reserved [ 1] Temp. TC 2] Temp. IR 3]GND green white yellow/brown Klemmleiste steckbar / Plug in terminal blocks: Klemmleiste steckbar / Plug in terminal blocks:

green white

Input 2 [ 15 ] PE [ 14 ]

[ 3 ] Output 2

Signal GND

[4] Gnd [5]NC

GND

Output Temp. TC

[2]GND

[6]230 VAC 7 J 230 VAC

NC [13]

Input 1 [ 16 ]

[1] Output 1

Signal

Output Temp. IR

[10] + 24 VDC [11] GND [12]PE pink grey yellow-green pink +24 VDC [ 11 ] GND [12] GND [ 10 ] PE[9]

Connecting cable

NTS 2-IR-A2-amplifier

24 V DC power supply NG SPS 24

Seite/page 5

FOS Messtechnik GmbH Germany

R-Temperature-Sensor MTS 408 with Power supply NG SPS 24

Anschußbelegung Connecting scheme IR-Temperatur-Sensor MTS 408 mit Netzgerät NG SPS 24

Rütgersstrasse 40 D-24790 Schacht-Audorf

Meßverstärker / Amplifier MTS 408: Netzgerät / Power supply NG SPS 24:

Anschlußkabel / Connecting cable:

www.fos-messtechnik.de

Telefon: +49 4331 9065 Telefax: +49 4331 9066

### **Nozzle Temperature Sensor**

NTS 2 - IR - A2



# Connecting scheme for IR-Temperatur-Sensor NTS 2 - IR - A2

Amplifier NTS 2 - IR - A2: 12-pin inline connector: Weidmüller SL 5.08/12/90B 3.2 SN OR

Standard cabell for Infrared thermometer NTS 2 - IR -A2: Material PVC, color grey, Ø 7,4 mm, 6-wires twisted pairs with overall screen

Plug with cable on the sensor side: Weidmüller BLZ 5.08/12B SN OR

Kabel: 6-adrig, paarweise verdrillt, 0.34 mm², Gesamtschirm /ellow-gree 7 6 ] PE[12] Reserved[9] IR[V][ 2] GND [ 11 +24 VDC [10] Reserved GND Reserved [ Reserved [ Temp. TC[V][ Reserved [ Reserved [ Temp. I Power onez 🐠 e Span : St ADC Max. Operating Pressure: 3500 bar Of Vm 01: 10 mV/PC V 01 - 0 : tuqtuO enuteneqmeT SI 30-400 °C Type NTS 2 - AI - S STN 9qYT Sensor Temperature IR Nozzle Phone +49 4331 9065 Fax +49 4331 9065 Rütgersstraße 40 D-24790 Schacht-Audorf **МЕЗЗІЕСНИІК СМВН** bressure sensor of the optical The inventors

Seite/page 6